

ABSTRACT OF DISCLOSURE

A micro-lens built-in vertical cavity surface emitting laser (VCSEL) includes a substrate and a lower reflector formed on the substrate. An active layer is formed on the lower reflector, generating light by a recombination of electrons and holes. An upper reflector is formed on the active layer including a lower reflectivity than that of the lower reflector. A micro-lens is disposed in a window region through which the laser beam is emitted. A lens layer is formed on the upper reflector with a transparent material transmitting a laser beam; the lens layer includes the micro-lens. An upper electrode is formed above the upper reflector excluding the window region a lower electrode formed underneath the substrate.